

## **ABSTRACT**

Formation of a mixed-material composition through diffusion using photo-thermal energy. The diffusion may be used to create electrically conductive traces. The diffusion may take place between material layers on one of a package substrate, semiconductor substrate, substrate for a printed circuit board (PCB), or other multi-layered substrate. The photo-thermal energy may be supplied by various devices, for example a YAG laser device, CO<sub>2</sub> laser device, or other energy source.